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Tables of Contents

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- ☐ Conference Proceedings
- ☐ Standards

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- ☐ Basic
- ☐ Advanced

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PPP extensions for IP/PPP-HDLC over SONET-SDH/

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Abstract:

IP has emerged as the internetworking protocol of choice. IP is a best-effort protocol which provides no guarantee of delivery or ordering of packets at their destination. It is designed to be transparent to the topology of the underlying transport network. Network transparency is provided by a framing protocol operating over the data link or physical layer. Due to the popularity of IP, attempts are underway to transport IP traffic over networks such as ADSL, HFC, ATM, **SONET/SDH**, and WDM. This paper examines the dynamics of IP traffic over **SONET/SDH** using **PPP** in **HDLC-like** framing. Alternative ATM framing (IP/ATM/**SONET**) is also presented, the main focus of this paper is on IP/**PPP/SONET** and its extensions, such as **PPP** multilink, and **PPP** tunneling. A discussion on the applicability of these **PPP** extensions to wavelength division multiplexing (WDM) networks is also presented in the conclusion.

Index Terms:

SONET asynchronous transfer mode digital subscriber lines hybrid fibre coax network internetworking synchronous digital hierarchy telecommunication traffic transport protocol wavelength division multiplexing ADSL ATM ATM framing HDLC-like framing HFC traffic transport IP/ATM/**SONET** IP/PPP-HDLC IP/PPP/**SONET** MAC layer PPP PPP multilink PPP tunneling protocol **SONET-SDH/WDM** **SONET/SDH** WDM network browsing best-effort protocol data link layer framing protocol internetworking protocol transport network wavelength division multiplexing networks

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